In the Specification:

Please amend the paragraph beginning at page 1, line 11 as follows:

In general, heat is an enemy for the IC chip and it is necessary that the internal temperature thereof does not exceed the maximum allowable junction temperature. The electric power consumption per operation area is large in the semiconductor device such as a power transistor or a semiconductor rectifier element. Therefore, the generated heat amount cannot be sufficiently released with only the heat amount released from a case (package) and a lead of the semiconductor device. It is feared that the internal temperature of the device may be raised to cause ~~any~~ thermal destruction.

Please amend the paragraph beginning at page 1, line 22 as follows:

| This phenomenon also occurs in the same manner in the IC chip which carries a CPU. The amount of heat generation is increased during the operation in proportion to the improvement in clock frequency. It is an important matter to make the thermal design in consideration of the heat release.

Please amend the paragraph beginning at page 2, line 27 as follows:

As for the constitutive material for the heat sink, it is insufficient to consider only the thermal conductivity. It is necessary to select a material which has a coefficient of thermal expansion approximately identical with those of silicon and GaAs, which are used as the semiconductor substrate, ~~and even has~~while having a high thermal conductivity at the same time.

Please amend the paragraph beginning at page 3, line 6 as follows:

A variety of reports have been made in relation to the improvement of the heat sink material, including, for example, a case in which aluminum nitride (AlN) is used and a case Cu (copper)-W (tungsten) is used. AlN is excellent in balance between the thermal conductivity and the thermal expansion. Especially, the coefficient of thermal expansion of AlN is approximately coincident with the coefficient of thermal expansion of Si. Therefore, AlN is preferred as a heat sink material for a semiconductor device in which a silicon substrate is used as the semiconductor substrate.

Please amend the paragraph beginning at page 5, line 16 as follows:

According to the present invention, there is provided a heat sink material comprising carbon or allotrope thereof and metal.~~;~~ ~~wherein a~~An average coefficient of thermal conductivity of those in directions of orthogonal three axes, or a coefficient of thermal conductivity in a direction of any axis is not less than 160 W/mK. Accordingly, it is possible to obtain the heat sink material in which the coefficient of thermal expansion is approximately coincident with those of the ceramic substrate (such as silicon or GaAs), and the semiconductor substrate (such as silicon or GaAs), etc., and the thermal conductivity is satisfactory.

Please amend the paragraph beginning at page 12, line 17 as follows:

Accordingly, it is possible to easily produce the heat sink material having a coefficient of thermal expansion approximately coincident with those of a ceramic substrate (such as silicon or GaAs), a semiconductor substrate (such as silicon or GaAs), etc., and having good thermal conductivity. It is possible to improve the productivity of a heat sink having a high

quality.

Please amend the paragraph beginning at page 13, line 16 as follows:

The following method is exemplified as another production method. The sintering step includes a step of setting the carbon or the allotrope thereof in a case, and a step of preheating an interior of the case to prepare the porous sintered member of the carbon or the allotrope thereof.~~;~~ ~~and~~ ~~t~~The infiltrating step includes a step of setting the case in a mold of a press machine, a step of pouring molten metal of the metal into the case, and a step of forcibly pressing the molten metal downwardly with a punch of the press machine to infiltrate the porous sintered member in the case with the molten metal.

Please amend the heading beginning at page 20, line 19 as follows:

~~BEST MODE FOR CARRYING OUT~~DETAILED DESCRIPTION OF THE INVENTION

Please amend the paragraph beginning at page 42, line 8 as follows:

~~In the meantime, i~~It is preferable that a low melting point metal, for example, one or more of those selected from Te, Bi, Pb, Sn, Se, Li, Sb, Tl, Ca, Cd, and Ni are added to the metal 14. Accordingly, the wettability at the interface between the carbon or the allotrope thereof and the metal 14 is improved. It is possible to suppress the generation of the grain boundary which inhibits the heat conduction. In view of the heat conduction, it is preferable that the low melting point metal does not form solid solution with the metal 14.

Please amend the paragraph beginning at page 43, line 7 as follows:

It is preferable that an element to reduce the melting point is added to the metal 14.

The metal to be added is Zn, for example~~;~~.

Please amend the paragraph beginning at page 60, line 27 as follows:

Still another exemplary experiment (sixth exemplary experiment) will now be described. In the sixth exemplary experiment, the porosity of SiC, the pore diameter, the presence or absence of Ni plating, the presence or absence of Si infiltration, the infiltration temperature, the pressurization pressure, the pressurization time, and the cooling speed were changed to observe the difference of the reaction of SiC/Cu and the infiltration of Cu under respective conditions. Obtained experimental results are shown in a table in FIG. 30. In FIG. 30, the reaction of SiC/Cu was determined by the thickness (average value) of the reaction layer formed between SiC and Cu. The determination condition is as follows. The basis of the determination condition is the fact that when the reaction layer of not less than 5 μm is generated between SiC and Cu, then the heat transfer between SiC and Cu is deteriorated, and the coefficient of thermal conductivity is lowered in a composite material for a semiconductor heat sink. The following experimental results are summarized:

(1)# if ~~T~~thickness (average) of reaction layer is not more than 1 μm → "no reaction";

(2)# if ~~T~~thickness (average) of reaction layer is more than 1 μm and not more than 5 μm → "slight reaction"; and

(3)# if ~~T~~thickness (average) of reaction layer is more than 5 μm → "strong reaction".